To School Children

LET'S TRY TO KEEP WELL

A series of talks prepared by the
District Inspectors
and
Other Officers
of the

PROVINCIAL BUREAU OF HEALTH

Issued by the
Provincial Bureau of Health
1922

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Department of the Secretary of the Province of Quebec.

Provincial Bureau of Health.

To the Children attending the Primary Schools in the Province of Quebec.

Dear Children:—

Here is a little book which was written for you and for your teachers. As you will see when it will be explained to you, the authorities of the Provincial Bureau of Health take a very great interest in your health and in the health of your families. You are still small and young, but as the years go by you will grow and will form in the future the most important part of your race. It is absolutely necessary and you will understand it later, that your health be protected from childhood, if your wish is to become strong men and healthy women. Under the guidance of your pastors and your teachers, you will learn to become sound Christians and good citizens. It is therefore important that you should, from childhood and youth, take the necessary precautions to prevent diseases which kill the young or make their lives miserable.

This little book contains advice which, if well followed, will help you in hardening your bodies against disease and in building a vigourous health, in such a way as to make life worth living and to give you the means whereby you may prolong it for the benefit of your families.

You will take this advice home and share it with your families. In many cases, your parents have not had the good fortune to be so well instructed in health questions as you have, and at the time they were going to school, hygiene was not taught as it now is, if ever it was.

A sane mind in a sane body is the greatest gift that may be given to man. You can and must do all in your power to reach such a goal. Religion and country demand it and I am assured you will not remain deaf to their appeal.

Dr Alphonse LESSARD,

Director of Public Health for the Province of Quebec.

Quebec, November 28th, 1922.

TO SCHOOL CHILDREN

LET'S TRY TO KEEP WELL

Foreword

Our purpose when requesting the District Inspectors of the Provincial Bureau of Health to prepare talks on hygiene for use by the teachers of this Province was not to publish a course on hygiene, but merely to supply the teaching staff with a compendium of practical notions easily understood by school children.

With the help of this book, teachers will be enabled to enlarge the scope of each talk according to their own initiative in order that their pupils may gather therefrom the largest measure of benefit.

The book contains talks for each day of a HEALTH WEEK which will however be of greater benefit to all if periodically repeated during the entire school year.

Hygiene is nowadays of the greatest concern to public powers: the present Government of the Province of Quebec has taken it up as a most important question in its programme and has appropriated much money towards fostering public hygiene, but in order to accomplish its full purpose, the co-operation of the whole population is required.

The PROVINCIAL BUREAU OF HEALTH, fully awake to its responsibilities in this matter, has decided to consecrate all its efforts to a campaign of popular education.

It is through the school that its purpose will be most readily attained. The child is well disposed to assimilate any notion of hygiene which may benefit his health and to form hygiene habits which will help him through life. The notions and habits thus acquired by the child will in turn be adopted by his family, thereby forming a public opinion with regard to hygienic questions.

With the approval of the Superintendent of Public Education, the Provincial Bureau of Health has mailed this book to all the teachers in this province and counts on their precious help in giving as wide a diffusion as possible to the indispensable notions of hygiene for the welfare of the whole community.

Dr E. M. A. SAVARD,

Inspector General,
Provincial Bureau of Health.

Let's Try to Keep Well

Programme of talks for a Health Week.

ON SUNDAY.

In churches, advice of the Clergy on the importance of public and private hygiene and especially of cleanliness of the body, the dwelling, of food and habits; and the value of the teachings of the week.

1st DAY.

General Hygiene.—Its importance, cleanliness for all and since early childhood,—the habit of hygiene.—Necessity of the cooperation of school and municipal authorities with children and their parents.

Creation of a public opinion, its influence upon the action of municipal authorities.

Benefits of hygiene for school children.

Application of general notions to the individual.

2nd DAY.

Personal hygiene.—Cleanliness, its necessity, its benefits to the body, mind and soul.

Hygiene of the mouth, skin, clothing, food, bedding, washing, baths.

3rd DAY.

Contagious diseases in general.—Declaration, absence from school, isolation or quarantine, consulting a physician, disinfection, sanitation of school rooms.

Necessity of anti-variolic vaccination.—Length of immunisation, revaccination.

4th DAY.

Tuberculosis.—Its ravages, causes, contagiosity especially through expectoration. Curability.

Precautions to be taken by the patient and the people living with him.

Preventive measures — Sunlight, air, abstention from alcohol, excesses, overwork, etc., avoiding drugs and quacks, relations with patients, cleanliness.

5th DAY.

Infantile Hygiene.—Feeding babies, care of milk, the clothing, bedding, cleanliness of the body, avoiding teething rings and comforters.

Food Hygiene.—Milkmen, butchers, bakers, grocers, canned foods, water

SUPPLEMENTARY DAY.

This is the weekly holiday. The teacher will require his or her pupils to write up a short task on one of the lessons given during the week. The pupils will chose a subject of which it will be easy for them to find the application either at home or in their neighborhood, but will avoid mentioning names and places.

FIRST DAY

GENERAL HYGIENE

HOW TO KEEP WELL.

All children wish to grow up, to become strong and healthy. How are they to achieve it? By being in good health and keeping in good health.

Health is the greatest wealth on earth and the only one which will give you gladness, joy and happiness. It is therefore important for everyone of you to know what ought to be done to enjoy good health and to recover it when lost. For this purpose, the laws of hygiene should be known and scrupulously observed.

The first of these laws is cleanliness. One must be clean in everything, always and everywhere, clean for oneself and for one's environments, in one's clothes and habits.

The body and its clothing must be thoroughly clean:—"A dirty, unkempt child is looked upon as a badly brought up child".

Whenever possible, bathing is a good hygienic exercise and well cleanses the body, but it requires certain precautions. Baths should not be taken immediately after meals, but should be postponed three hours afterwards. The best time for bathing is before breakfast or at the end of the morning before lunch.

If baths are not possible, then frequent washing of the body is to be resorted to with wet towels. Avoid a false bashfulness which only preserves dirtiness. A good thorough washing takes away all dirt which has come from outside. In the morning, after getting up from bed, the face and hands should be washed, the teeth brushed and the mouth rinced. This should again be done before bedtime.

The hands coming in contact with all kinds of things and being thus exposed to be soiled in so many ways, should always be kept as clean as possible. They can always carry the germs of diseases without their origin being suspected. The hands shall be carefully washed with soap before every meal as well as after each task that may cause them to be soiled. When dirty, they should never come in touch with the face and especially the mouth. Nails shall always be kept clean and cut neither too short nor too long. People gnawing their nails with their teeth not only show that they are dirty but also that they have a bad temper.

One of the most important of all precautions is the care of the mouth. An unclean mouth promotes foul breath and the decaying of the teeth. Good teeth are indispensable for a good digestion and all precautions should be taken to keep them in

good order. Every morning and after each meal, they should be cleansed with a good brush or the end of a towel, then the mouth should be rinsed. Decayed teeth are the cause of much suffering and annoyance.

It is a dangerous habit at school to exchange with one's neighbors, pencils or erasing rubbers and more especially chewing gum.

These things may carry terrible diseases from one mouth to another. If your neighbor has sores in his mouth, how would you like to get them? And if you are sick, would you like your friend to become also sick through your own fault?

The ear is a delicate organ. Wash and clean it only with the corner end of a towel. Never put anything whatsoever in it.

Boys' hair should be preferably cut short, brushed every day and shampooed once a week. The hair must always be well dried after each washing.

Girls' hair should be brushed and combed morning and evening and braided for the night.

One should always go barehead inside the house or school. The feet shall be washed at least once a week with water neither too hot nor too cold.

In order that the body be kept clean, clothes should always be clean. Underclothes shall be changed once a week.

The outside clothes which receive and carry all kinds of dusts shall be beaten and brushed every day, if possible, and outside the house.

When damp from rain or perspiration, clothes stick to the skin and may occasion colds; they should be taken off at once and put on again only when thoroughly dry.

Under no pretence, should the shirt worn during the day be kept on at night. It should be taken off and left to dry as thoroughly as possible.

It is not enough to be clean on one's body and clothes, one must also be clean in one's habits.

Children who shove their fingers in their noses and afterwards carry them from nose to mouth are certainly not clean.

Neither can they be called clean, those who spit on their fingers to wipe their slate, and also those who wade through mud holes and then go home or to school with heavily soiled boots.

You surely avoid such things, but there are other things which you do and this is surely as dirty and even more dangerous, because it may bring about diseases which are most often mortal. Thus spitting on the floor is pretty generally indulged in by everyone of you. This sputum dries up and become a dust that the wind carries on your hands and face, on your food, on your table and your desk. If this sputum comes from a person suffering from pulmonary trouble, from a neighbor who coughs considerably, it may transmit to you the disease of that patient. This should suffice to show you that you should never spit on the ground. Use your handkerchief for that purpose; if it is used for your nose, it may also be used for your mouth. When you cough, cover your mouth with your hand; it is a dangerous thing to cough in other people's face.

The spray of saliva projected by coughing is as dangerous as sputum on the ground.

You now know what should be done to keep clean. Now is the time to take good habits such as will cause other people to say when speaking of you : "See how this child is clean and well brought up !"

This good opinion of others and the good health you will enjoy should be the best encouragement to practice the laws of hygiene.

Be clean in all things, always and everywhere. Remember the saying : "Cleanliness is next to godliness".

Dr. Ad. CORSIN, D. P. H.

CLEANLINESS

The first precaution necessary for enjoying good health is the observation of the rules of a most severe cleanliness. It is therefore essential that children be made to take the habit of being clean.

It has been claimed on good grounds that were the elementary rules of cleanliness always observed, half the problem would be solved because many diseases are the outcome of filth.

The influence of cleanliness upon health is enormous. Many disorders, especially skin diseases, would be avoided, if care was taken to always keep the body clean.

Cleanliness is always possible. Poor as well as rich people can and must take care of themselves. Cleanliness is not the birthright of wealth, a luxury, but it is a quality and even a virtue.

Cleanliness of the body. — The surface of the body or skin show numerous creases, prominences and furrows in which dusts accumulate. Within our skin, there are millions of small glands, some secreting sweat, others secreting fat matter.

By producing sweat the sudorific glands maintain the body at a constant temperature. For this reason, transpiration is heavier during the summer heat and by evaporating this transpiration produces cold.

By producing fat the sebaceous glands help in keeping the skin in a state of suppleness and in preventing it from becoming dry.

The fat and sweat mixed with dust form all over the body a lining which, when not taken off by a good bath but left to accumulate, forms a kind of crust which is called dirt. The dirt prevents the skin from performing its task; it is akin to a coating of varnish which prevents the air from coming in contact with the skin, and the poisons produced by the organism and which are generally eliminated by the skin are thereby retained to the detriment health.

In order to demonstrate the noxious effect of this coat of dirt, tests were made with animals. Guinea-pigs in laboratories were covered all over with a coating of varnish; they have survived only a short time and have died from poisoning by the dejections of the body which could not be eliminated through the skin. The dirt accumulated through uncleanliness is something like this coating of varnish; it may not go as far as causing death, but causes many disorders and predisposes the body to becoming a prey to all kinds of diseases.

It should not also be forgotten that dirty people give forth foul smells like rusty butter which are caused by various acids which, being in contact with the skin, are irritating, thereby producing itching, boils, abcesses, etc. Skin diseases are generally found in dirty people.

The bath and shower-bath. — The only way of eliminating this coating of dirth is the bath or shower-bath. The best way is first to wet the body, then to cover it will a soap lather, then to rince it in a bath or under the shower. Warm water should be used, cold water not being a good cleanser.

Baths should be taken weekly, otherwise the health may be impaired. The fact that there is no bath in a house should not prevent the occupants from washing the whole body with soap and warm water at least once a week, a tub being easily employed for this purpose.

You surely have experimented the beneficient sensation following a good bath. It is inconcievable that some people seem to fear it and turn away from such a satisfaction.

Boys and girls, never let a week pass without washing your body from the tip of your hair to the sole of your feet. It would still be better for you to take a daily bath. Take this good habit now and keep it during your lifetime and you will find it a source of health and welfare.

Cleanliness of the feet. — Cleanliness of the feet is most important. Not only do our feet support our bodies, but they are the organs of locomotion and because of this, heat is developed. Besides the feet are encased in shoes which prevent ventilation. This results very often in a very abundant perspiration and an accumalation of fat matter. The smell from this perspiration is often very disagreeable and very trying. It happens that people complain from sores on their feet and their legs; this is most often due to over-perspiration of the feet, and the physician will often find upon examining them that these people seldom if ever wash their feet. The only remedy is frequent bathing of the feet in cold water which brings about the hardening of the skin. Bathing the feet in warm water renders the skin soft.

Cleanliness of the hands. — The hands are the parts of the body which are the most exposed to dirt. They come in contact with everything and are the medium by which dirty or dangerous things may be brought to us without our always being aware of it. They touch our food, our lips, face, eyes and when soiled may depose everywhere disease germs. They should therefore be kept absolutely clean and should as a rule be washed everytime they may have become soiled. In the morning, they shall be cleansed with a brush and soap and this washing should include the wrists and fore-arm as far up as possible. Before meals, the rule should be observed to always wash them. Children should be made to know that they will never be tolerated to sit to meals with dirty hands, on account

of the numerous dangers arising therefrom. The hands should always be washed after coming out of the water-closet. Whole families have been poisoned through the fault of a dirty cook. Washing the hands is a habit that should be taken by everybody.

Cleanliness of the nails. — The nails of both feet and hands should always be kept clean. Finger nails in mourning constitute a severe danger. Germs of nearly every disease have been found there. Nails shall be kept clean with brush and soap and shall be scraped with a nail file of a not too hard material in order not to injure the skin. They should be cut fairly short which will help in keeping them clean. The nails of the hand shall be pared round, those of the feet must be pared square to prevent the danger of hang-nails.

Cleanliness of teeth. — Take the good habit of brushing your teeth, 1st: before bedtime, to eliminate all particles of food or other matter that may cause decay; 2nd: in the morning, to take away all deposits that may have formed on the teeth during the night.

If you wish to preserve your teeth, it is indispensable that they be kept clean, otherwise they will decay. Dental decay is due to special microbes found on dirty teeth.

The teeth play a most important function in the nourishment of man. They prepare and facilitate the digestion of foods by grinding and masticating them. It is inadmissible that boys and girls nowadays should go without a tooth-brush; it is an indispensable article for people who like to be well. A tooth-brush should be an individual article and under no pretence should it be used by the whole family. All dental pastes on the market may be recommanded; soap may however be used as a substitute. Dentals powders are not to be recommended because they may end in destroying the enamel of the teeth.

Cleanliness of the nose and ears. — The nose is kept clean by the proper use of the handkerchief. Fingers should never be used for wiping the nose, nor should they ever be put in the nose. This is a bad habit that should be eradicated both in the young and the old. It may difform the nose and bring about hemorrhages.

The external ear is easy to keep in a good state of cleanliness notwithstanding its numerous furrows; soap and water are sufficient. The inner canal secretes serosities which keep off dusts. No pin heads, pieces of wood or other hard material should be used to clean it on account of the danger of injuring the drum.

Cleanliness of the hair. — The hair protects the head but it also becomes a receptacle for dusts of all kinds and pellicles which must be removed daily with a brush or a comb, the

former being preferable to the latter which may injure the scalp.

The hair is cleansed by washing it with soap or other creamy substances. Washing the hair once a week is sufficient. To prevent it from becoming dry, any soft oil may be used in small quantities. The hair should not be cut too often, once a month is sufficient.

Cleanliness of articles of daily use. — Soiled articles and clothes must be rigourously cleaned, otherwise of what use would be cleanliness of the body, if the things used to clean it or to cover it were dirty ?

At school, teachers should examine daily all their pupils to see if they are in a proper state of cleanliness. A child whose face, hands, nails or clothes are dirty should be sent back home. It should be borne in mind that the above practice is recommended to teachers by the Council of Public Education. The school is not only the place for acquiring knowledge, but also education, and dirtiness always denotes bad education.

Dr. A. LAPIERRE, D. P. H.,
Medical District Inspector.

THE VALUE OF CLEANLINESS

Many people think that all that is soiled, stained or discolored is dirty and this is true to a certain degree, but from the point of view of hygiene some dirt is worse than other dirt.

The worse dirt is that which bears disease germs, this species of dirt causes greater harm : a glass from which someone has just drunk may look clean and transparent, but it is in reality dirtier than the white shirt stained with the green of the grass on which a child has just played. The shirt may be soiled, but the child is uninjured. But if you should examine with a microscope the rim of the glass, you would probably find marks of the lips and microbes from the mouth of the user. Many microbes are inoffensive, but if a person who has used the glass was a carrier of the germ of diphtheria and if the glass has not been immediately sterilized, the danger of infection is very great.

Many kinds of dirtiness may well be found together. The child whose clothes and hands are habitually dirty is not only a sore to the eye, but is also much exposed to contracting any kind of transmissible disease which finds its way into the school. He always runs the risk of gathering disease germs with dirt.

Germs and Dusts

Many people are afraid of the dust in the air and believe that it contains germs of all diseases. This danger is not as great as was formerly thought. It is true that dust contains many germs but the greater number are harmless. The dangerous germs from coughing or sneezing or from spitting on the street or on floors die quickly when dessicated by exposure to air or to sunlight. Some survive, however, and when blown with the dust by the wind, they may be carried into the mouth and nostrils. This danger especially exists for tuberculosis germs which are spread broadly and on account of their greater vitality take a longer time to die than other microbes.

Dry sweeping should never be resorted to because it moves dusts about in the air. For the same reason, a moist cloth should always be used for dusting furniture to the exclusion of feather dusters. Vacuum cleaners are the ideal instruments for cleaning houses and schools. The minute particles of dust floating in the air and which are seen through a ray of the sun contain but very few germs. Generally speaking, there is but little danger of becoming infected through the air, unless one be very near a person who coughs or sneezes, or in a thick cloud of dust set up by the wind or by dry sweeping. Disease germs have no wings and do not fly through rooms. They are mostly spread not by the movements of the air but by careless people who distribute them broadcast.

How germs are carried from one month to another

A sick person when coughing or sneezing, throws in the air a fine spray from his nose and mouth. Every particle of that spray may be the vehicle of thousands of microbes. If you wish to know how this transmission of infectious diseases takes place, observe when you have a cold, how easy it is for the germs to pass from one mouth to another. Note whether your handkerchief, if used by you to cover your mouth and nose when you cough or sneeze, is handled by others. Note whether you sneeze or cough on somebody's face, or hands or on the dishes on the table. Note when you touch the tap of the sink or the handle of the door. If you observe well, you will see the persons who have touched your handkerchief, the tap or the door handle carry their hands to their mouths or their noses or touch things they will carry to their mouths. Numberless and varied are the ways whereby germs of all sorts, some of which are very dangerous, are carried from one mouth to another.

It is on account of the danger of spreading the germs of tuberculosis or other equally dangerous germs, that well-bred

people refrain from expectorating on the ground and that municipal sanitary services pass bylaws prohibiting this dirty habit. The sputum of a consumptive may contain thousands of tuberculosis germs. When expectorated on the sidewalks by negligent persons, it dries and mixes with the dust in the air or, and this is still more dangerous, it sticks to the shoes when still fresh and active and is carried in the houses where it soils the floor or the carpets then is brought up to the hands and mouth.

Preventon against intestinal diseases

Certain diseases, like typhoid fever, are transmitted not by germs from the nose or the mouth, but by germs from the secretions of the bowels or from the urine. The microbes of these diseases are usually transmitted by water or contaminated milk or by flies. In the cities, where there is a sewer system, the sewage is immediately disposed of in closed pipes. In the country, however, it is most difficult to effect this disposal in accordance with the laws of hygiene. There is always a danger of fecal matter seeping through crevices in the soil into wells or being carried by flies on the food.

The protection of the mouth

Most diseases find a way in through the mouth. Thus are the germs of colds, influenza, tuberculosis, tonsilitis, whooping-cough, diphtheria and pneumonia brought in the organism. All these diseases first affect the nose, the throat and the lungs. Through this same door are introduced the germs of scarlet fever, measles, cerebro-spinal meningitis and probably also of infantile paralysis.

It is therefore most important that this door be well protected against all invasion from the ennemies of our body.

You have probably read the story of the Wooden Horse of Troy and learned how the Greeks hidden in the body of the animal gained an entrance in the city they were besieging. They had left their enormous wooden horse outside the walls and the Trojans out of curiosity brought it in their own city. During the night, the Greeks came out of the horse and opened the doors of Troy for their army. In this same way, do the disease germs penetrate in our body. They are hidden on pencils, glasses and our fingers which we ourselves carry to our mouths.

From this, the following rules may be deducted :

I. Nothing must ever go into the mouth except foods, liquids and the tooth-brush.

Whereas during meals, it is necessary to handle things which are carried to the mouth, here is another rule which should be observed as rigourously as the above.

2. The hands must be carefully washed before meals and also before eating food that is carried to the mouth with the hands.

Soap and warm water destroy many germs and brushing the hands takes away pathogenic germs which otherwise might fall on the food.

It should be noted here that the use of a common or roller towel will set to naught all the good effect of a thorough cleaning of the hands. These towels always carry the fresh germs deposed on them by the last user.

Care of cuts and other wounds

It is generally unimportant whether the skin is soiled when germs are not carried as far as the mouth. The skin is thick enough and proof to germs. But if there be cuts or abrasions, things will go otherwise. The germs that cause infection of wounds may penetrate into the body through any solution of continuity in the skin. These germs are often found in rubbish or on the ground and it is not necessary that they be freshly deposed by sick persons or by germ carriers to exercise their ravages.

A wound in which germs contained in dirt have penetrated becomes red and painful and sometimes takes on a suspicious appearance. All cuts or wounds in the skin should be made to bleed freely and should then be cleansed carefully with boiled water. If pus appears in the wound, a physician should be consulted. With deep wounds, a physician must immediately be called in as they are dangerous and necessitate dressings which no person who is not a physician or nurse may undertake with any chance of success.

Dr. H. PALARDY, D. P. H.

District Inspector.

GENERAL HYGIENE

Infantile hygiene. — Contagious diseases

Allow me, dear children, to tell you what is general hygiene and also what is infantile hygiene.

I will talk to you of those dangerous diseases called contagious diseases which are most often met with in little children.

I

First, what is **general hygiene** ? It is a science the aim of which is to keep everybody in good health. To attain this end, this science of hygiene rather strives at preventing disease than at curing it. When a person becomes sick, it is the physician who possesses the art of curing disease who should be called to restore such person to good health. But even then, the physician who cures (after God who is the best physician) will prescribe to his patient, especially during his convalescence, the observation of certain rules which belong to hygiene. Thus, a physician attending a patient who suffers from tuberculosis (or consumption) will prescribe to him, besides overfeeding, pure and especially cold air and in order to let him get this pure air, he will order him to go to the country in high places in the mountains, where the patient will find, together with cold and pure air, health and even life which perhaps was ebbing away.

Good air, pure air, is the great principle of life which is prescribed by hygiene. Physicians whose duty it is to cure, use this remedy which often succeeds where all the others have failed.

Hygiene, therefore, aims at preventing disease in man, but when man becomes a prey to a disease, it remains with medecine rather than with hygiene to cure him.

II

But the science of hygiene is not only applicable to grown-up persons. It also applies to children, all the more so as it is in childhood that its principles should be first put in practice. When the mother has surrounded her newly born baby with all the care prescribed by hygiene, this baby will live and be in good health. If he begins life protected by all the precautions laid down by hygiene, he will grow up into robust manhood. But should he be neglected from the point of view of hygiene and be left to grow up haphazard, that is without a proper and well regulated feeding, in a badly ventilated and lighted room, he will either die before his first or second year has passed or

he will be sick during his whole life. During childhood, that is until the age of 12 or 13, he will be an easy prey for most contagious diseases:—whooping-cough, measles, scarlet fever, diphtheria, etc, and if not killed by one of these diseases, he may become a victim, at 18 or 20 years of age, of that most terrible disease :— consumption, which will be sure to kill him, and why ?.... Because since his earliest years, he will have been deprived of the protection of hygiene, because he will attain his 18th or 20th year with a body weakened by bad or insufficient food, by bad air and lack of light, by the diseases he will have suffered when young.

A child resembles a plant. If the latter be not nourished with good earth, a regular watering, sunlight and pure air, it will fade, dry and die.

Infantile hygiene teaches rules which may apply to the child as well as to adults. Infantile hygiene talks thus to mothers :—"You shall give your child the proper food for his age and strength !" And this is right. Do not the females of animals feed their young with their own milk ? and is this not only natural ? Then why should a mother refuse to do the same thing for her child ? No mother should have a good reason for not giving her child the food he is entitled to.

Infantile hygiene also says to the mother :—"You shall lay your baby in a good, clean bed, you shall give him his bath every morning, you shall properly clothe him with light clothes in summer and heavier clothes in winter. His room shall be well lighted and well ventilated : full of sunlight and pure air". Hygiene also adds : "You shall see that your child never contracts any contagious disease by keeping him away from all possible source of contagion", etc.

So much in fact could be said on infantile hygiene, that it would take much more space than we can afford to touch upon every point. I believe, however, that I have said enough to convince everyone of you of the great importance of hygiene on the lives of men as well as on the welfare of the community at large.

God has put man on earth that he may live his natural span of life. Man therefore must live a christian and healthy life. He who thus lives in a christian way is agreeable to his Creator and to his own soul; he who thus lives in a healthy way is agreeable to his own body by making it robust and beautiful. As long as he is a child, he cannot by himself observe all the great principles of hygiene : a proper and wholesome food, cleanliness, pure air, baths and sunlight; it is his parents and especially his mother's duty to see that, during his childhood, he is surrounded with all the care required by hygiene.

III

I will now speak upon my third point which is contagious diseases. Whole volumes could be written on this question, but I shall be as brief as possible.

There is a prejudice that still seems to persist in the minds of certain mothers and I shall ask your help, dear children, in striving to eradicate it. It seems to certain mothers that it is a necessity for their children to go through all the contagious diseases. Where one child contracts a contagious disease : such as whooping-cough or measles or scarlet fever, mothers will be heard to say : "It is as well that he has it today as later; he is bound to get it someday, why not now, he will be rid of it once for all". This is how certain mothers talk before their sick child's bed. This is a false prejudice that you must help in eradicating in your mothers. You must tell your parents that it is not necessary for your little brother or sister to have whooping-cough, or measles or diphtheria, that in fact he should not have it by all means, that if he is attacked by one of these diseases, it will be because your parents will not have prevented your little brother or sister from going to places where they may have caught one of these disease.

These diseases are never caught without cause. When a child is infected with one of the above named contagious diseases, it is because he has been in contact with another child having such disease, because he has come near a sick person. Mothers should see that their children do not come in contact with other children suffering from one of these diseases. They should refrain from visiting families where there are such cases. "Caution is the key to safety, and this means that prevention is better than cure".

A mother will be horrified at seeing her child near a precipice or a river; she will fear with reason danger for his life; she knows that if her child courts danger, he may perish. How is it she is blind to danger when it is a question of a contagious disease ? Ought she not to know that this danger is greater than the former ?

Let me give you further details on the danger of contagious diseases, how they are caught and how they may be avoided ?

Whooping-cough, measles, scarlet fever, croup, diphtheria and even tuberculosis set especially upon children. They are caused by germs which are called bacillus (in the singular and bacilli in the plural) and are found in the expectoration or sputum and the secretions of the nose and throat. The bacillus is an infinitely small being which can be seen only with a special instrument called microscope.

As I have just said, bacilli are found in the secretions of the nose and throat. When a child coughs, spits or sneezes, he

throws in the air millions of these dangerous bacilli which when breathed by other children communicate the disease to them. Thus, my dear children, you may catch one of these diseases which may be deadly.

How then will you all succeed in avoiding those diseases ? As I have already told you:—by keeping away from children who are sick and from places where these diseases exist. If you come near a child having one of those diseases, you may be exposed to breathing these germs when they are thrown in the air by the cough of that child and you may become sick like him. Shun, therefore, the company of all sick children.

Another good precautions that you should also take in order not to become sick is never to borrow a pencil, a pen, a book, etc., from another child and also never to carry to your mouth a pencil or any other thing, to avoid to wet your finger to turn the leaves of your book or copy-book; on your pencil, your pen, the pages of your book, there are millions of germs of diseases which your wet finger or the object itself will carry to your mouth.

A third precaution is never to allow a sick child to go to school. If you find that a child is or seems sick, report at once this fact to the teacher. If you learn that there is sickness in the home of a child who goes to your school, immediately notify the teacher that he may send the child home, because the latter may bring contagion in the school to those who are well.

These precautions should still more rigourously be adhered to when there are many cases of contagious diseases in a municipality and when this epidemy is known to the school authorities. The removal of a sick child from school, even at the onset of the disease, is a means of sound protection and caution, in that it removes the danger of contagion from the school.

The Provincial Bureau of Health has in its program a campaign against the three great scourges which threaten our population : — venereal diseases, tuberculosis and infantile mortality.

In order to wage a successful fight against tuberculosis and infantile diseases, the Provincial Bureau of Health has begun by the school where grows the generation who to-morrow will be men of our country. If the children of today know well the precepts of hygiene, the men of to-morrow will put them in practice. By educating our young population through its lectures, the Bureau of Health will attain its aim, which is to educate the community concerning hygiene and also concerning the means to preserve good health.

When you go back home, dear children, tell your parents what your teacher, has told you regarding hygiene. The

lesson on hygiene you have just received, you can in turn give it to your parents who will put it in practice with your younger brothers and sisters, to the best interest of your health and theirs, and to help you all in living to a ripe old age.

Dr J. F. DELISLE, D. P. H.,

District Inspector.

THE MEDICAL INSPECTION OF SCHOOLS

The medical inspection of schools is an institution the purpose of which is to keep children in good hygienic conditions such as will permit them to draw better benefits from the education imparted to them and to prepare them to render to the community of which they are future members the highest possible sum of services.

This definition shows the double purpose of school hygiene which is first to help in giving to children the fullest opportunity of gathering the best results from their studies and secondly to prepare for the country a strong and healthy race.

The medical inspection of schools is useful to education in three ways:—1. by improving the school building; 2. by helping to find out children suffering from physical defects; 3. by classifying the children according to the possibilities of their mental development.

Let us briefly consider each of the above points:—

The school building

The building has a considerable effect in the health of the individual. Statistics show that the more people live in bad hygienic conditions, the higher is infantile mortality and the more easily do tuberculosis and other contagious diseases spread all around.

It is the same thing with school buildings where children pass so many hours every day in conditions which may be detrimental to their health.

The air may be vitiated by a too high temperature above 70° F., by too little moisture, that is 20 to 30 per cent instead of 50 to 60, and by a complete stagnation. The natural means to obviate the above defects, is the change of air. This is done by widely opening the windows during recreation time and by the continual entrance of fresh air during class time through special small openings or by openings made in the windows. In order to be effective, this ventilation made during class hours need not lower the temperature too considerably. It is

easy to maintain about 65° F. in a continually changed air. This would be the ideal thing.

During recreation time, children shall play in the open air. Whatever means are taken, it is impossible to obtain in the houses the vivifying conditions of the outside air. Why, during fine weather, should we not give to the school children the benefit of health and life produced by living in the open air ? Why could we not hold the classes in the school yard when this is possible and weather condition permitting ? These open air classes are daily becoming more popular and generalized. The best results have been obtained in all the schools where they are held. Children suffer less from colds, they stay home less, their weight increases rapidly, their health is better and their progress is more apparent. Let all teachers try the experiment and they will soon see all the advantages that can be derived from this method.

The lighting of the class room must be as abundant as possible. The windows should be as large as possible, free from all obstruction and on the side of the sun. The sun is one of our best friends; it is the mightiest destructor of microbes. It has been said that : "Where the sun goes in, the physicien does not enter". This can be realized in school as well as in the home.

The school room should be kept very clean and in good order. But how can this be done ? First, there should never be any dry sweeping. Dust is the vehicle of many microbes, especially of the microbe of tuberculosis. Sweeping should be done with a wet broom and outside of class hours. Dusting should be done in the same way.

No common drinking cups should be allowed in schools as they may be very dangerous. Fountains with the water spouting up or individual drinking cups should be always used.

We are satisfied that the above advice will show how important it is to maintain schools in the best sanitary conditions.

Physical examination of children

Experience has shown that in all countries many school children suffer from physical defects, which harm their health and their work. Let us see what are the principal diseases that may threaten children, what are their causes and the means to prevent them.

First, there are all the contagious diseases which do so much considerable, and sometimes irreparable, harm among teachers and children. It has been said that the school was an eminently propre medium of transmission for contagious diseases. Children come from many homes in which these diseases may exist and it is well known that such diseases as

diphtheria, scarlet fever and especially measles spread with very great rapidity. No precautions therefore are to be spared in helping to diminish the danger.

These precautions are the following :—

1. Declaration to the municipal authorities of all cases known or suspected to exist ;

2. Removal from school of all children who may transmit a contagious disease;

3. Duplicate of the list made by the municipal authority of the families where there exists a case of cantagious diseases to be given to the school;

4. Refusal to admit in the school any child who has absented himself without a certificate stating that there was no contagious disease in his home, unless it is known that there was none ;

5. At the beginning of each school year, require from all children a certificate of successful vaccination performed within seven years ;

6. Cooperation in all measures recommended by the science of hygiene and helping to protect the community against the spread of contagious diseases, such as the control of systems of drainage, the protection of the water supply, anti-typhic and anti-dipththeritic vaccination, Milne's treatment in cases of scarlet fever and measles.

How beneficient would be the result of the practice of the above advice by the school authorities of the Province ! Thousands of cases of contagious diseases and hundreds of deaths would be saved the population every year. This improvement would furthermore save an enormous number of days of absence from school due to those diseases so aptly designated as avoidable. Let us, therefore, say :—"If they are avoidable, let us do anything to avoid them".

The principal physical defects met with in school children are the following :—skin, eye and ear diseases, diseases of the tonsils and teeth, diseases due to malnutrition. Let us say a word of each.

The skin diseases include pediculosis, scabies or itch, scald and impetigo. Lice and nits in the hair of children and especially of girls are much too frequently found. This shows a gross dirtiness that should not be tolerated. Scabies and scald are contagious and are met with from time to time.

Impetigo which is characterized by purulent pimples on the face and lips, is also a disease which may spread in school. Teachers might help in eradicating it by a thorough supervision of the pupils.

Teachers should always be on the look-out for defects of the eyes or the ears. Myopia might be termed an occupational

disease of school pupils. Many suffer from it in such a way as to impede all progres in their studies. A child who sees imperfectly what is written on the black-board or who does not hear distincly the explanations given by the teacher cannot benefit from his studies. This, however, is the reason why so many pupils are thought to be backward. These defects can only be detected by a thorough testing of the sight and the hearing which may be done by the teachers when they have been properly trained to do it. It is to be hoped that such an examination will soon be held in all the schools of the province.

Tonsils are often affected in school children. They are swollen and are accompanied by small tumors situated in the throat and which are called adenoids. Children suffering from this breathe only with difficulty and insufficiently and soon become pale and weak. Many also hear with greater difficulty. A little operation will help them in recovering, and in a few weeks the improvement will be complete.

Decaying of the teeth is the affection which is more frequently met with in children, 75 per cent and more suffering from this defect. A decayed tooth should be promptly attended to because it is an open door to microbes of all sorts and diseases of many kinds. The following example of what was observed in a Boston children asylum with 300 inmates shows what care should be exercised on this point:—before the inauguration of a dental clinic, the infectious diseases peculiar to children such as diphtheria, mumps, scarlet fever, pneumonia, measles, whooping-cough, tonsilitis, chicken-pox, etc, gave 80 cases yearly, but after three years, the number of cases fell down to 3 per year". This shows that the teeth of children should always be taken care of.

Lastly, there are in the schools quite a group of children who present symptoms indicating malnutrition. They are weak, anaemic, pale, underweight and undersize. They become an easy prey to all infections and diseases. They are often absent from school and are backward in their studies. They therefore require special attention and proper care. In many schools, they form a class by themselves. They are taught in a special room of which the windows are kept open as much as possible. During cold weather, these children keep on their outer garments and as long as the temperature will allow, the teaching is given in the open air. The hours of work are limited to 3 or 4 every day. In the morning, the children are given milk and some biscuits or bread. After the noon meal, they are given at least an hour to rest and sleep on camping beds, under an awning in the open or in a class room with open windows. In the afternoon, they are given something to eat as in the morning. This very simple treatment has given surprisingly good results. The children rapidly grow in weight,

become stronger, their cheeks become rosy and it is remarkable how with fewer hours of study their progress is as rapid as that of the children in the regular classes. Such an example might well he follow here.

Mental development

All experienced teachers know that children are far from being mentally equal. Some have talent, other are less talented or are deprived totally of this quality. The former learn quickly with next to no efforts, the latter learn slowly or very little. At examination time, some succeed very well without having worked much, some succeed only because they have worked very hard, others completely and as it seems by their own fault.

From this may be deducted the following facts. Why should all the children be put together if they do not possess the same mental development ? Why should the more intelligent pupils be held in the same class for a long time because of the backwards ? Or why should pupils who cannot advance quickly be made to always follow the others. The more intelligent pupils loose a considerable time because the teacher is obliged to repeat for the hundredth time the same lesson for children who many not understand even then. The former would progress much quicker if they were not impeded by the backward children, were the latter put in one class by themselves.

This is a pedagogical problem which ought to be studied. The solution seems to be that of the French scientists Binet and Simon whose method allows of rapidly classifying the pupils according to their possibilities of mental development and of placing them in the classes to which they belong. There would be an immense progress if this method were applied here.

Conclusion

This should convince the school authorities of the necessity of opening their doors to the representatives of school hygiene. Education and hygiene are sisters in pursuing the same noble and human purpose and it is the duty of the population to help them in realizing their common aim.

Dr J. A. BAUDOUIN, D. P. H.,

District Inspector.

SECOND DAY

PERSONAL HYGIENE

CLEANLINESS IN CHILDREN

It may be said of cleanliness that it is the basis of Hygiene. It ranks as a law in the holy books of every religion : — the Bible, the Coran, the Vedas, etc. At a time when hygiene was still for long centuries to come an unknown science, the legislators found out the necessity of cleanliness, but as they could not on account of the semi-barbaric mentality of their coreligionists, impose it as a protection for the health of the community, they made it obligatory on grounds of religious duty. It may truly be said that Moses was the first hygienist in this world.

Cleanliness can be practiced at all ages, in all stations of life, in all conditions of fortune. When begun in a adult age, its practice necessitates an everyday preoccupation; when taught to children in their early life, it becomes with them a habit that they will exercise without having to previously bring their will in action.

Why, has it been asked, should children have a pure heart and dirty hands ? The answer is obvious :—there is no reason whatever. It may be perhaps impossible for a child to escape being dirty, but why should he remain so ? The evil does not consist in getting dirty but in remaining dirty.

If the child has been been initiated on his mother's knees to the practice and confort of cleanliness, if, as soon as he begins to understand things, he is accustomed to feel confortable and happy only when he is clean, if later it is demonstrated to him that it is owing to this habit of being clean which has become natural with him that he is indebted for his good health, he will remain clean all his life, first because dirtiness will be abhorrent to him, and secondly, because he will know the risks he daily avoids through its observation.

The person who has acquired the good habit since childhood will always suffer when life will bring him in contact with dirtiness and will always seek means to avoid it.

In getting out of bed in the morning, a child will begin by washing his face and hands and even, should he have time, by taking a bath. He will also wash his teeth and clean his finger nails.

During meals, he will use a napkin and will avoid staining the table cloth and his own clothes.

When going to school, he will avoid wading in mud or rubbing his boots in the dust.

At the school, he will not wipe his desk with his sleeves nor his slate with his tongue.

During recreation time, he will play heartily and should he soil himself — which is pretty inevitable — he will wash his hands and dust his clothes before going back in class.

At home, he will take care of his clothes, he will not through them pell-mell on a piece of furniture or on the ground, but will carefully lay them aside.

Before each meal, he will wash his hands and after the meal, he will wash his teeth.

Before bedtime, he will take the same care of himself as in getting up in the morning.

The child who acts in that manner at the fixed time or when it becomes necessary to do so, will lose no time thereby, because a few minutes will suffice and he will also by acting thus help his parents by sparing them much work; besides he will keep himself in good moral and physical health.

Without having to speak, he will be an example for others. No father likes to stay dirty when his son is clean !

When an adult, the boy will keep his good habits because it would cause him physical pain to loose them; even when poor, he will look better dressed than rich people who are dirty. Between two applicants for a position, an employer will always choose the one who is clean, because he will know that this one will be as clean in his work as on his clothes. No doubt it is an easy thing to keep clean by always thinking about it, but it is still easier when habit from chilhood is the motive power.

A man is called by his employer:—if it is a second nature with him to be clean, he will, before answering and without even having to think about it, wash his hands and dust his clothes. Another is similarly called, but not being intimately accustomed to cleanliness, he will forget to take the same precautions and will answer his employer with dirty hands, unkempt nails, dusty clothes and boots. To whom of the two will the employer give the preference ?

The late Hon. J. Israel Tarte once begun a newspaper article in this way :—"Clean peoples are strong. The Japanese are a clean people, therefore, they have defected the Russians". In his usual curt way, Mr. Tarte gave expression to an absolute truth. Bodily dirtiness engenders moral dirtiness or at least is a powerful factor in breeding it. A dirty person will always number with the vanquished in this world, will aways be an easy prey for all vices, falls and defeat.

Dr. Fréd. PELLETIER.

HYGIENE OF THE TEETH.

The teeth come out of the gums when we are but a few months old. There are 20 in the first dentition and they are called **temporary**, the last one appearing near the end of the second year. The first set or temporary dentition begins to fall away in the sixth year although a few teeth persist until the twelfth year and sometimes later. The permanent teeth are placed in the mouth in the same order as the temporary and number thirty-two. The last four, known as wisdom teeth, may come out only between the age of 17 and 25 years and sometimes later.

Different kinds of teeth.

Certain animals, like the dog, have teeth only to bite and snatch away; herbivorous animals like the cow and horse, have teeth that grind the food only. Man has two kinds of teeth:— four cutting teeth that cut and are called incisors, they are situated in front of each jaw; six molars or flat teeth situated at the back of the jaws and used to grind food, they are also called grinders; two cuspide and four biscuspide teeth, (used for grinding and cutting at the same time) placed on the sides of the jaws.

The part of the tooth above the gums is called **crown**. Inside the gums is the root which holds the tooth firm in the jaw. The larger part of the tooth is composed of a hard, bony substance called **dentine**. In the crown, the dentine is covered with a harder coating, shiny and smooth which is the **enamel**. The root is covered with cement. Inside the dentine is a soft substance called **bulb** in which are the nerves and blood vessels.

Dental decay and its causes.

When particles of food remain in the intervals between the teeth, they are decomposed and the resulting chemical substances which are due to the action of microbes, react upon the enamel which they eventually destroy. When the enamel is thus affected, the dentine which is directly under it is also rapidly attacked, and a cavity is thus formed which, if neglected, exposes the nerves to the action of microbes. Thus does dental decay develop itself, which disease is frequently met with in children.

Another affection which is very common and severe is what is called **alveolar pyorrhoea** due to the action of microbes on the edge of the gums. This causes the gums to wear away ending by the falling of the teeth.

Effect of dental decay.

Neglecting the teeth leads to very bad results such as:— foul breath, the overworking of the stomack by partly ground food; the contact of sweetened or acid foods, hot or cold, of hard substances, with the teeth causes insufferable pain and forces the patient to see a dentist to have the sick tooth treated, if there is still time, or to have it pulled off if it is too sick. The microbes producing dental decay may also give birth to poisons which will affect the entire organism. In certain cases, those microbes go into the blood and give rise to severe affections such as rhumatism and certain diseases of the heart. A neglected tooth is an open door to our worse ennemies.

The care of the teeth.

The enamel naturally protects the teeth and it is important that it should remain uninjured. It is soft to a certain degree and may easily be broken. Thus, nuts should not be cracked between the teeth, nor should teeth be pick with hard instruments.

On the other hand, the grinding of food and especially of certain hard substances such as bread crusts, polishes the teeth and takes away sediments which might otherwise be formed on them. Hard foods which are eaten by certain savege people help in keeping their teeth in good order. We might follow their example in this and fare better on this respect. But as most people do not eat such hard foods, it is necessary that a particular care should be taken to prevent decay and keep the mouth in a good state of health.

The instrument which helps us best in reaching this end and in keeping the teeth in good order is the tooth-brush. The teeth should be washed daily morning and evening at least. It is still better to use a brush after each meal to remove at once all food sediments from the teeth. Once a day, a good paste or powder may be used to better wash the mouth. Care must be taken that pastes or powders contain no grit or anything hard because this might injure the enamel. They will help in removing sediments and food particles that could not otherwise be washed off; at other times, a brush dipped in boiled water will be sufficient.

The tooth-brush must be neither too wide nor too narrow, the hair must be soft and made to easily go into all intervals between the teeth. Both the outside and the inside surface as well as the top of the teeth should be brushed. The brush should not be moved sidewise, but from the root towards the end of the teeth to help the hairs to penetrate in all the intervals. The best method is to apply the brush flat and firm-

ly on the teeth as if to penetrate inside the teeth and then to brush in a circular way.

When once brushed, the teeth should be washed with tepid water forcing it to circulate around the teeth by the movements of the lips, cheek and tongue. This is as necessary as brushing. The toilet of the mouth should not take longer than five minutes.

The regular use of the tooth-brush is not always sufficient to keep the intervals free from all obstruction. A bit of floss passed between the teeth will supplement the brushing. Care should be taken not to hurt the gums.

The care of the teeth by the dentist.

Notwithstanding the best of cares, a hard concretion named **tartar** often deposits itself on the teeth and may bring about dental decay before one has time to suspect it. The inspection of the teeth in schools shows that at least two out of three mouths need to be taken care of by a dentist.

If often happens that the teeth are irregularly placed in the jaws which may bring about mishapen mouths. These teeth give a bad aspect to the face and are apt to decay because there are between them a greater number of cavities in which particles of food are kept and also because such badly placed teeth impede the grinding of food and sometimes render it impossible. The dentist can put such teeth in good order and also maintain the health of the child, while correcting the appearance of the face; but, this treatment should be begun as early as possible. It is a good thing to have one's teeth examined by a good dentist at least twice a year. The dentist takes away the tartar, polishes the teeth, fills the cavities without pain or much cost. But, when care is not taken to have the teeth examined in this way, **necrosis** or decay will come without the patient knowing it at first and when a toothache brings him to the dentist's office, he will suffer much pain and pay more, and even may be forced to have the sick teeth extracted. In this case, as in all similar ones:—**an ounce of prevention is better than ten pounds of cure.**

Dr H. PALARDY.

HYGIENE OF THE MOUTH.

The mouth on account of its many uses is one of the principal parts of the human body. By admitting air into the lungs, it helps breathing. Through its various transformations, it modifies the voice and produces the language. But its principal function is to prepare the food and to help the digestive organs of which it is a most important adjunct.

In its normal state, the mouth contains an innumerable quantity of micro-organisms, which are very small living bodies, invisible to the naked eye, absolutely harmless and playing an important part in the salivary digestion. Besides these micro-organisms, there are others of the same size of which some are dangerous and which, through their secretions or fermentations, may cause certain diseases of the mouth, dental decay and abcesses, etc.

The mouth through which a quantity of air and all foods pass is therefore exposed to be in contact with various substances which may be more or less infected. The air we breathe always contains a certain quantity of microbes among which may be found the microbe of tuberculosis, when there is a negligent tuberculous patient in the immediate neighborhood. We also know that the air is the vehicle of certain contagious diseases and that the mouth is the open door to microbes as those of measles, diphtheria, influenza, etc.

On the other hand, we have already said that the mouth may be contaminated by a certain number of foreign substances more or less infected:—such as food exposed to direct contact with microbes, or handled by infected persons, or food of bad quality. The habit of children of putting things such as pencils, pens, etc, in their mouths, of licking stamps or envelope flaps, of exchanging a pipe, chewing gum, also constitutes a risk of infection.

The protection of the mouth against infectious germs is a membrane lining called **epithelium** which prevents microbes from penetrating into the body and which is provided with a number of secretive glands having a recognized antiseptic power. When the epithelium of the mouth becomes destroyed in some place, or when the saliva becomes insufficient or altered, the innumerable germs contained in the mouth find entrance and may cause a general infection of the whole body.

Mouth diseases are part of the symptoms of various diseases such as diabetes, Bright's disease, typhoid fever, etc. Besides these, there are the diseases of the mouth proper of which the more frequent are ulcero-membranous stomatitis which is the type of mouth inflammations, thrush so frequent in babies, dental decay which may be called the disease of school days.

Dental decay is especially frequent in children at the time of the fall of the milk teeth. Various authors show that scarcely 20 per cent of children at school age are free from this disease which is due to a decalcification of the hard parts of the teeth. Heredity, foods poor in phosphate elements, or too cold, the

accumulation of food particles between the teeth and their fermentations work to a certain point towards this decalcification of the dental tissues, but the micro-organisms existing by millions in the mouth are the real agents of dental decay. This is an open door to infection. Many ulcers of the tongue and mouth, many dental absesses, many cases of neuralgia are due to dental decay. Decayed teeth, moreover, have a very had influence on the general health. Cases of dyspepsia, of gastric troubles, of indigestion, of diarrhoea, of feebleness are due to a bad grinding of food.

The above facts show that cleanliness and antisepsy of the mouth are a necessity not only for sick, but also for well people. With the former whose resistance is weakened by long diseases, it is important to try and diminish the virulence of the microbes in the mouth and the means of doing so are cleanliness and antisepsy. In certain cases, when the patient suffers from diphtheria, for instance, the antiseptic care of the mouth should be continued for a certain time after the patient is cured, because he may still be a carrier of germs for some weeks. This also applies to nurses and other persons who have come in contact with patients suffering from a contagious disease.

With well people, in order to prevent the accumulation of food or rather of food particles between the teeth, especially after eating sweets or fat which help acid fermentation and dental decay, a good washing of the mouth and brushing of the teeth should be resorted to morning and evening and after each meal. The brush shall be used together with a good tooth paste or water which will dissolve mucous and fat and take away food particles. Ordinary soap having a bad taste, it should be mixed with various ingredients which will make it palatable.

The brushing of the teeth should be followed by a good gargle with an antiseptic solution which may not kill all the microbes but will, at least, diminish their virulence. The best are thymic acid, peroxide of hydrogen, essence of mint, resorcin, etc. Solutions should be prefered to powders because they better clean the intervals between the teeth and leave no layers.

Notwithstanding this care, it may happen at or just before school age that dental decay appear. The first teeth, the milk teeth, are destined to fall away and it would be useless to try and preserve them; the only thing to do is to pull them. But the adult's teeth are to remain for life and they should be preserved by all means for as long a time as possible. As soon as a tooth is attacked by decay, a dentist should be consulted.

Dr J. Léon HOUDE, D.P.H.,

THIRD DAY

CONTAGIOUS DISEASES IN GENERAL

CONTAGIOUS DISEASES.

What is a contagious disease?—It is a disease which may be caught from a person already sick.

What is an epidemy?—It is the spread of a disease to many persons at the same time.

What are the principal contagious diseases?—Measles, diphtheria, scarlet fever, small-pox, chicken-pox, scabies or itch, typhoid fever, tuberculosis.

Are these diseases severe?—Yes, because they often cause the death of children or adults, bcause they cause them much pain; because they always cause inconvenience and are costly to treat.

What should be done when a contagious disease breaks out ? — Tell it to one's family; get a doctor to be treated ; have the will to get cured; declare the disease.

What is meant by declaring a disease?—This means that the case should be reported to the municipal authorities. In every parish, there are men who are charged with the task of preventing or stopping epidemies.

Is the declaration of diseases important?—Yes, because it is one of the first measures to avoid the spread of disease.

Can children go to school when not yet vaccinated?—No. When they have pimples?—No. When they have a sore throat? —No. When they have fever? ——No.

Why?—Because they may have a contagious disease which they may communicate to other children.

What is contagion?—Is it the communicating of a disease from one person to another.

How can contagion be avoided?—People who are in good health should, when there is an epidemy, avoid public meetings, houses where there are sick persons and which are placarded. They should always keep clean, avoid colds and avoid getting very tired. No bad or suspicious water should be drunk. Vaccination with a good vaccine should be under gone at least once. Children should not go to school if there is a case of contagious disease in their home. People who are sick should have no intercourse with others, this is called isolation; their family should not go out of the house, this is called quarantine; the patient, his clothes, all the things he has touched and, finally, the house itself should be disinfected.

What is disinfection?—Disinfection is a means of killing microbes.

What is a microbe?—It is an infinitely small living organism which causes a contagious disease.

Is there in schools another disease that may be communicated to other children?—Yes, pediculosis.

What is pediculosis?—A disease which is due to lice. Children should not go to school without their mothers having first perfectly cleaned their hair.

What is always to be remembered?—It should always be remembered that a contagious disease may be avoided; that a contagious disease can be cured without other persons getting it; that if contagious diseases did not exist, there would be less deaths, many more people in good health and more people wealthy.

Dr Chs.-Henri DUMAIS, D.P.H.

CONTAGION.

What is contagion?

It is the transmission of a disease from a person who suffers from it to another person who is well.

Before going further, I must tell you that all diseases which may be transmitted from one person to another by contagion are called **contagious diseases** and that they are all caused by **microbes** or **germs.** It is always necessary that there be a **contact** for a disease to **transmit** itself, that is for **contagion** to exist.

This **contact** may exist in two ways : — **directly** or **indirectly.**

1. A **contact is direct** when a child in good health comes near a sick child, speaks with him, plays with him, touches him and catches the same disease.

For instance:—a member of your family is sick from a **contagious disease** such as scarlet fever or diphtheria. He lies in bed in his room and only your mother, the physician and the priest may go in his room to minister to him and take care of him. They always take many precautions in going in and out of the room: before going in, they don a special jacket or robe, when coming out they take off this jacket, wash their face, hair and hands with water with which some disinfecting drug has been mixed. They have been in contact with the patient, but in their case **there will be no contagion,** because they will have done all that was necessary to avoid being sick or transmitting the disease to others in the house or in the neighborhood.

On the other hand, notwithstanding the advice of your parents who have forbidden you to go in the patient's room, because it was dangerous for your health, you forget to obey and go in the room. Once there, you speak and play with the sick person, you touch him, shake hands with him, and even go as far as kissing him. After a few minutes, you go out and go back to play or work as if nothing had happened. A few days later, you feel sick and the physician finds that you have caught the same disease as the one from which the patient is suffering. You have caught the disease by **direct contact**; there has been contagion between the patient and yourself.

2. **Contact is indirect** when going near a sick person you touch things he has himself handled or which he has used during his disease and which **have not been disinfected,** (such as utensils, clothes, books, toys, etc). If your parents have had the care to desinfect those things before giving them to you, **contagion is not possible** and you will run no risk.

Indirect contagion may happen in a thousand different ways and may follow a more or less long course. Here are a few examples :

For instance: — (a) Your little brother has diphtheria and is isolated in a room in which you have been told not to go. You are an obedient little boy and you will not go in. The patient drinks from a glass which your mother brings back to the kitchen to wash. But through an oversight, you drink from this glass and a few days later you are sick from diphtheria. This is indirect contagion.

b) One of your friends lives in the house next to yours and is sick from scarlet fever. During his illness, you lend him a book to help him while away the time. He reads it and a few days later sends it back to you. It is your turn to read it and a week later you fall sick. The germs of scarlet fever have been brought to you with the book and you are sick through indirect contagion.

c) Jack goes to school while some one at home has small-pox. He and the other children at school have never been vaccinated. Then 8, 10, 12 children fall sick from small-pox and the disease is spread in 10 or 12 families at once. It is the beginning of an epidemy in the village. Although through no fault of his, Jack has brought the disease from his home to school and his comrades have caught it from him through indirect contact, resulting nevertheless in contagion. Such a thing would never have happened if, at the onset of the disease, Jack had been kept home, and if all the children had been successfully vaccinated previously.

Here are three instances which show you how indirect contagion happens. It may also exist when you breathe or

gulp dusts in which there were dessicated particles of the sputum of consumptives (tuberculous) ; and also when you eat foods (bread, vegetables, fruits) or when you drink water or milk in which there is the germ of typhoid fever; this often happens.

But enough for to day, and to conclude: always remember that **direct** or **indirect conatgion** is always due to **microbes** which are the germs of **contagious diseases,** as the seed of wheat is the germ of an ear of wheat.

Where there are no **microbes,** there are no **contagion** nor **contagious diseases.**

Drive away the **microbes,** by cleanliness !

Destroy them by disinfection !

Cleanliness and disinfection are the ennemies of contagion.

Dr. Edgar COUILLARD, D. P. H.

CONTAGIOUS DISEASES

Over 2,500 children in this province die yearly from contagious diseases. It is evident that the mortality rate from this cause could be decreased by one half and even two thirds if the necessary measures were taken to protect children.

Many persons do not know that it is their duty in conscience and justice to all, to avoid spreading contagious diseases whenever this is possible, and this is always possible.

People believe their moral responsibility to be at stake if they steal a dollar, but their conscience is at rest when through their fault they spread a contagious disease in a family, thereby causing heavy expense and sometimes death.

No one is now permitted to ignore the necessary measures whereby the spread of contagious diseases may be avoided.

Here are the principal means and it is the duty of everyone to observe them.

1. Declaration :—

When a physician is called to attend a case of contagious disease in a family, he is bound under penalty of a fine of $20.00 for each day his neglect lasts, to declare such case to the municipal sanitary authority.

Nobody should feel offended because one's physician has done his duty in this respect.

When no doctor is called, the father is held under the same penalty to make this declaration. It is a well known fact that hidden, undeclared, cases are the cause of all epidemies. It

will be easily understood that the authorities are prevented from taking any measure of protection against cases of the cotnagious diseases will most easily spread.

2. Protection of schools :

When a case of contagious disease exists in a family, no member of this family is permitted to attend school during all the time the disease remains contagious. The children may go back to school only when the attending physician has certified in writing that all cause and risk of contagion have disappeared.

It is needless to say that the school being the place where members of many families congregate, is the place where contagious diseases will most easily spread.

3. Placarding of houses :—

The purpose of placarding houses is to notify the people that there is a risk of contracting the disease for all those who go in the house. There is no dishonour whatever in such a placard, as so many people think.

4. Isolation of the patient :—

The contagious patient must be isolated in a room with a nurse, his mother or a sister. All things coming out of the room must be previously disinfected; these persons should not communicate with the other members of the family. The isolation must last until such time as the patient is no more contagious.

5. Quarantine :—

For certain diseases, such as small-pox, cholera, typhus, all the house and the persons living in it must be quarantined with a keeper who will see that no one comes in or out of the house.

6. Disinfection at the end of the disease or at the death of the patient :—

To destroy the germs that may still live. If all these measures were taken at the onset of the disease and continued until the end, contagious diseases would not spread from family to family as it so often happens, and we would have from 50 to 75 per cent less of cases of contagious diseases and, consequently, a lesser mortality.

Dr. A. LAPIERRE, D. P. H.

CAUSES AND ORIGIN OF DISEASES

All things in nature can be realize only with the help of various causes. Of the latter, some are necessary, essential, they are the reason why a thing exist:—they constitute its efficient cause without which no effect could be produced.

For instance, no plant can exist without the necessary cause of a seed, of a germ. The seed is the efficient cause of a plant; without a seed, there would be no plant.

But the necessary cause does not always engender its effect; most often causes which are termed scondary must be brought into action. In the case of a plant, for example, the seed falling on a stone or in the snow will perish or at least will not develop itself. The secondary causes to develop it are humidity, air, a favorable temperature, a well prepared ground.

The essential factors, the efficient causes of disease are the microbes, living organisms of an infinietly small size, visible only with the help of a microscope and even sometimes invisible with the strongest of lenses.

But in order to give rise in our body to these disorders which are called diseases, the mere presence of microbes is not generally sufficient, because the human body is organized in such a way as to help it in defending itself against its ennemies in the ordinary course of things. Secondary causes are necessary to weaken our vitality and decrease our resistance or means of defense. Fatigue, loss of sleep, anxiety, drinking, overwork, excesses of all kinds will favor the development of microbes in the body which will resist less. Troubles will then appear and the disease will come in existence.

Sometimes, however, without the help of secondary causes, the microbes will attack the body which cannot resist them, and disease will overcome health. This constitutes direct infection. The microbes, either through their virulence or on account of their overpowering numbers, find in our tissues conditions favorable to their development, multiply themselves, secrete their poisons in such quantities and with such strength that the body is without any defensive power.

Microbes only act by means of their toxins or poisons which they secrete and of which the morbid effect proves how virulent they are.

Most microbes are to be found in the blood of a sick person at some stage of the disease. Some stay in the superficial tissues :— skin, mucous membranes, tonsils, but their toxins are no less virulent and are quickly absorbed.

Some microbes will always produce the same kind of disease; they are called specific. Others will cause varied and

sometimes very dissimilar troubles; they are called indifferent microbes.

Like all living beings, microbes are sensitive to the conditions in which they live; — but most of them possess a great resisting power and will remain alive for a long time, especially if protected against air and sunlight.

Where do these microbes come from ? — Directly, they come from sick persons. The patients, in the course of their disease, emit the microbes contained in their blood, their tissues, or which find their way out with the secretions of the various organs :—skin, mucous membranes, tonsils, lungs, kidneys, intestines.

In an indirect way, the patient infects the inmates of the house, through his clothing and bed linen, the floors, etc.

Thus, in spitting and coughing, the consumptive throws out in the air, on the floor, on his clothes innumerable germs, millions of germs, of tuberculosis, which will live for a long time in the dust, on clothes, on the hands, on the walls of houses or in water and in other liquids. In the same way does a person suffering from scarlet fever or diphtheria transmit his disease.

Thus, it may be seen that contagion even when transmitted in an indirect way is always very easy. It is also very frequent. The linen used by patients, the things soiled by them, the dust of floors and of streets transport the germs. The ground contaminated by the dejections of patients will preserve for a long time germs which being carried away by the rain will wash down in wells and springs, thus conveying disease to those who drink of that water. Flies which pry on sputum and other poisonous matter and feed upon it, very often transport the germs of disease on our food. Parasites and insects of all kind,—lice, fleas, bugs—will draw with the blood of patients the poison of their disease and transmit it to others.

The study of diseases, of the lack of care in isolating the patients, in destroying the germs with which they soil their clothes and home, demonstrate that in the neighborhood of sick people, microbes are innumerable and that their ravages may become very far reaching.

In summing up :—1. Diseases are caused by microbes ; secundary causes such as fatigue, overwork, etc., are usually necessary for the outbreak of diseases.

2. Diseases come directly from the patients themselves and indirectly from persons or things who have been in contact with patients.

Dr. J. E. MASSON, D. P. H.

MICROBES

Under the name of microbes are designated all the inferior organisms so small that they can not be seen except with a microscope. This is a general term comprising many beings that differ totally in the general classification. Microbes include :—

1. Infusoria belonging to the animal kingdom.
2. Moulds and yeasts belonging to the vegetal kingdom.
3. Bacteria placed at the lowest limit of the animal kingdom. These will be the object of our special study together with their principal manifestations which are : reproduction, life and death, and the production of disease.

Bacteria

Bacteria are microbes belonging to the family of seaweeds with a single cell.

Size : — Their greater size varies from half a thousandth of one millimeter to two thousandth of one millimeter. It will thus be seen that they are infinitely small and a good idea of their size may be gathered from the fact that about 400 millions bacteria are required to cover the space of one square inch and 7,000 placed end to end make an inch long.

Structure. — Bacteria are constituted by only one cell. Some are in the shape of a ball, they are called **cocci.** (singular : **coccus,** as in **streptococcus**).

Others are shaped like a stick and are called **bacilli** (singular : bacillus). The microbes of tuberculosis and diphtheria are **bacilli.**

A third variety is in the form of a spiral thread and is called **spirillum** (plural : **spirilli**).

Mobility. — According to the species, microbes have or have no movements; these when existing are due to the presence of vibratil lashes.

Reproduction. — Microbes are living organisms and as such possess the power to reproduce themselves. The greater part do so by division. The mother-cell gives birth to two cells or microbes and so on. This is done with an extraordinary rapidity when the microbes are living in a favorable medium of temperature, humidity, etc. Taking milk for instance, tests have shown that samples containing 5 to 6,000 bacteria immediately after milking contain millions at the end of 24 hours. This reproduction is all the more active when milk has not been cooled and is not preserved in a state of absolute cleanliness.

Certain species of microbes have a different method of reproduction. They form a granulation called **spore** that

detaches itself from the mother-cell. The spore has a greater vitality than the microbe. The spore of the tetanus bacillus is alive after a five minutes boiling.

Nutrition. — Microbes breathe and feed. They breathe oxygen which some of them take from the air (aerobic) and some from the decomposition of matter containing this gas (anaerobic).

Microbes feed, some at the expense of a living being and they are then often injurious, others by producing the destruction of dead beings. In the latter case, their action is beneficient because they give back to nature the simple bodies such as nitrogen, oxygen, hydrogen, carbone, of which the dead body was composed.

Secretions. — Microbes secrete waste matter of which nearly all are poisons. Some of this waste matter like **ptomains** are similar to vegetal alcaloids (strychin, atropin, morphine) and may constitute salts in combining with acids.

Others called **toxins** are of an incertain combination. These are very dangerous, and are real poisons. Their poisonous effect has been demonstrated by injecting them to animals thereby producing disease symptoms such as fever, sleepishness, convulsions, paralysis, anaesthesia, etc, according to the kind of poison. These effects have been obtained with infinitesimal doses; for instance, 2/10 of one milligram of the toxin of the tetanus microbe is sufficient to kill a small animal such as a guinea-pig.

Origin and localisation. — The ground is the receptacle of microbes which are quite abundant in the upper layers and decrease in number in the lower ones. This decrease is more or less rapid according to the nature of the ground. Water also contains microbes brought in it by the washing of ground water, from sewer outlets, by seepage from the cesspools. Such polluted water must never be used for drinking or other alimentary use.

Air also contains microbes. This was proven by Pasteur, one of the greatest scientists in the 19th century. These microbes come from the ground which receives them from the body of man and of animals and from dwellings. They are to be found in great numbers on the surface of all solid bodies, and are raised in the air with the dust.

Ways of penetration in the body. — Microbes penetrate in the human body by three different ways.

1. Into the digestive tract with food or drink. Typhoid is usually caught by drink water polluted by typhoid germs and tuberculosis attacks children through drinking milk polluted by bacillus of tuberculosis.

2. Into the lungs with the inhaled air. This is the way in which man absorbs the microbes of bronchitis, grippe, pneumonia, tuberculosis.

3. Through a sore or a wound. Thus are superficial abcesses and suppuration of wounds caused.

Ways of egress from the body. — Persons who suffer from contagious diseases eliminate large quantities of microbes.

The microbes of tuberculosis, diphtheria, whooping-cough are eliminated by the expectoration of patients. The nasal mucosities of persons suffering from scarlet fever and measles are dangerous because they contain the germs of these diseases. The microbe of typhoid fever is to be found in the stools of patients. The skin particles of patients suffering from small-pox and scarlet fever spread these diseases.

Manner of production of these diseases. — Microbes create a disease by their own action, but also by their secretions or toxins. In certain cases, such as tetanus, the microbes do not multiply themselves and disappear after having secreted their toxin.

We may thus see that microbes can be found everywhere and that we are all exposed to their action, but this does not mean that we should be perpetually afraid of microbes. The body when sound and in good health, successfully resists the influence of the microbes which have penetrated in it. The human body enjoys a certain natural immunity. But should there be a decrease of the state of health, then this immunity also diminishes or even disappears to give way to a state of receptivity more or less great. For this reason, it is urged upon all persons to observe a good hygiene and to protect against pollution the air we breath, the food and beverages we use, the dwellings we live in.

Dr. Thos. SAVARY, D. P. H.

SCABIES

Scabies which is known under the common name of itch is caused by very small animals or parasites which may be seen with a good ordinary lense. Their body has the form of a sphere and has four pairs of legs with which they bore furrows immediately under the surface of the skin causing thereby insufferable itching.

These furrows look like irregular lines dotted with black and white specks. The black specks are the dejections of the animal and the white one's are its eggs. The eggs hatch in seven days and the animal is full size in a month's time. It

then lives on the surface of the skin and later gets under it to lay eggs.

The parasite of scabies may pass from one person to another in several ways.

They walk slowly and do not jump like fleas.

Thus must the contact be direct to transmit this disease from one person to another, although contagion is also transmitted by clothes and other contaminated objects.

In numerous families, all the children and even the parents catch scabies because the children play together and sometimes sleep together.

Itch attacks a person between the fingers, on the wrists, in the inside of the elbow, under the arms and around the waist, but very seldom in the face.

The itching is intense and may sometimes bring about exzematous infections of the skin on account of the scratching.

Sores and pimples found on children at school are very often due to scabies.

Here is the way of treating this disease.

The furrows must be opened and the eggs and animals destroyed by a good brushing of the skin with soap after which an antiseptic ointment or lotion must be used.

The clothing must be passed through a stove at 120 degrees of heat, the bed linen and under-clothes must be laundered separately from all else and the other contaminated articles not having a great value must be burned.

Sulphur in an ointment is the most useful remedy. The following formula is good :—

Sulphur flour..	2 parts
Carbonate of potassium..	1 part
Lard..	12 parts

First rub in black soap, then follow with a bath after which the whole body must be covered with this ointment and remain so during 24 hours. A second bath is then taken to remove the ointment and cleanse the body.

If needed, this treatment should be repeated three days in succession.

This ointment is however to be avoided by those who suffer from heart or kidney diseases.

It is always better to consult a physician to well establish the nature of the disease before undertaking any treatment.

Dr. L. A. CHABOT, D. P. H.

ANTI-VARIOLIC VACCINATION

"Small-pox is a blur on a cultivated community."
KELSCH.

Since vaccination was made available those only who do not object catch small-pox and, for this reason this disease is more and more restricting its ravages to the barbarian, half-civilized or backward communities. In our own province of Quebec, ever since the sad lesson (3,164 deaths) of the small-pox epidemy of 1885 in Montreal, the "right" to contract small-pox is rarely if ever claimed !

Ravages of small-pox before the discovery of vaccination

The natural immunity against small-pox being less than one per cent, those who escaped this disease were far and few between, and one third of the patients died. According to Bernouilli, a famous mathematician, not less than fifteen million people in the eighteenth century were killed every 25 years by small-pox.

Süssmich, a prominant statistician, has calculated that small-pox killed habitually one-twelfth of the world's population.

In Iceland, in 1707-9, small-pox sent to their grave 18,000 of its 50,000 inhabitants.

Of the 15,000 inhabitants that the City of Chester had in 1775, only 1,060 had not yet had small-pox. (1)

This is enough to show that, before vaccination, the chances were high for one of getting small-pox, of dying from it, or of remaining disfigured or blind or perhaps both.

Discovery of vaccination

In 1798, the immortal Jenner, after observations lasting two years, put forth his claim that inoculation of cow-pox would be the preventive of human small-pox. Until the year 1850, vaccination from arm to arm only was practised. In this later year, in order to more easily get the necessary vaccine and also to guard against diseases which might be spread by the arm to arm inoculation, vaccine institutes were opened and it may be claimed to-day that animal vaccine (directly obtained from heifers) has superseded humanized vaccine.

The vaccine which is preferably used now-a-days is a lymph purified by adding to it glycerin—**glycerinated vaccine,** which is distributed in hermetically sealed glass tubes.

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1) These figures are taken from a pamphlet of the British Medical Association (1905).

Proofs of the efficiency of vaccination

Nothing shows better the protection afforded by vaccination, than what is observed in the staffs of small-pox hospitals, when, alongside with properly vaccinated employees, there are some who have unfortunately neglected or refused to get vaccinated. For instance :—

Of 734 nurses and other employees of the Metropolitan Asylums Board's Hospital (London), 79 who had been immunized by a previous small-pox and 645 who were protected by vaccination when they entered the hospital did not get small-pox; the balance, or 10 nurses and employees who were not vaccinated took small-pox.

At Highgate Hospital, of 137 nurses and other employees, only the gardener who had not been vaccinated, took small-pox.

In 1892-93, at Leicester, the anti-vaccination stronghold, 40 persons were employed at the small-pox hospital. Of 6 nurses, who had refused to be vaccinated, 5 took sick from small-pox and one died. A nurse who had not been vaccinated since 10 years also took the disease.

Let us say (notwithstanding the anti-vaccination upholders of the Leicester Method) that it is possible to maintain small-pox hospitals only when the staff in charge has been recently vaccinated and that, consequently, the opening of such isolation hospitals will never dispense of the practice of vaccination.

That small-pox attacks preferably the unvaccinated members of families is shown every time there is an out-break of small-pox. Here is a striking example:—A few years ago, in Westmount (a select town adjoining Montreal,) on Metcalfe Street, there was a family of 5 persons. One, a child 5 years old, was the only one who had not yet been vaccinated. He only caught the disease and lost his life. One can imagine the despair of his parents who reproached themselves before us that they had sacrificed the life of their child by unwillingly having neglected to have him vaccinated early after his birth, as they had done with their other children.

Let us, in concluding, remind our readers that it is owing to vaccination and re-vaccination that armies are now protected in the field. During the last war, all the Canadian soldiers were invariably vaccinated immediately after enlisting, not only against small-pox, but also against typhoid fever, and it has never been claimed to our knowledge that there have ever been any protests.

Why legislation on vaccination should be enacted

Vaccination efficiently protects against small-pox (and would do so completely were all vaccinations carefully renewed until no reaction whatever is observed at the point of inoculation).

Vaccination holds no danger, when a pure vaccine is used and when the operation is carefully, that is aseptically performed, and when the sore is subsequently and with the utmost precaution protected against all contamination, which is the sole way of vaccinating that ought to be employed.

Vaccination is upheld by the faculties of medicine of all the universities and especially by the three universities of this Province.

With vaccination, whole areas can be made refractory in an absolute way to small-pox.

With compulsory vaccination in force, any small-pox epidemic can be entirely stopped in fifteen days.

The school especially should be made healthy by vaccination. It is indispensable to send children to school, but parents have the right to demand that they be not thereby deliberately exposed to variolic contacts.

The Quebec Health Act authorizes all municipal councils to pass compulsory vaccination by-laws. Nearly half of our 1300 municipalities have availed themselves of this law and now have their by-laws.

A provincial by-law enacts that all persons who have been in contact with a small-pox patient be immediately vaccinated, for the double purpose of preventing them from having small-pox and of limiting the spread of the infection.

By a provincial by-law also, it is forbidden to any person having the control of a school to admit therein children who have not been vaccinated since seven years.

Dr. X.

FOURTH DAY

TUBERCULOSIS

TUBERCULOSIS

Means of avoiding it

Dear children,

You know that a contagious diseases is a disease caused by a germ which may be transported from one person to another. A germ is a living being, infinitely small, so small indeed that when enlarged 7 or 800 times with special instruments it is still seen with difficulty.

Among contagious diseases, there is one of which you have heard and which bears the name of tuberculosis or consumption.

This disease has killed in the space of ten years, in the province of Quebec, nearly 32,000 persons. You can thus see how important it is to know well how contagion is effected and what should be done to avoid it. It must first be remembered that tuberculosis picks its victims at every age and that the child as well as the adolescent, the adult and the old may became a prey to it. Tuberculosis may exist under different forms, such as tuberculosis of the bones, of the articulations of the elbow and the knees, of the intestines, of the kidneys, of the glands of the neck; but the most common form and the one in which the germ is more easily transmitted is tuberculosis of the lung, that is: the form in which the germ, (called Koch's bacillus from the German physician who discovered it), goes into the bronchial tube through which breathing is done and into the lung tissue where it locates itself.

After a certain time, if the person thus attacked has not sufficient power to defend himself because he is too weak, he will begin to cough and expectorate.

In this expectoration liquid or sputum, there are thousands of germs and if the patient spits on the floor of his house, of the store where he shops, on the floor of the church or of a public hall, he disseminates his disease. After the sputum has become dried, the germs contained in it are mixed with the dust and when swept with the air will be inhaled.

This will show you how important it is to accustom yourselves to always expectorate in a handherchief or a spittoon. Spitting on the floors is not only a dirty habit but may become dangerous to others. In 15 to 20 years from now, some of you may have become the victims of this terrible disease and if you have not the habit of using your handkerchief, but always spit anywhere you please, you will become a constant danger for others.

What should be done to avoid contagion ? First, acquire habits of cleanliness while in school and at home. Never sit to meals without having first washed your hands so as not to soil the food you will touch with the germs which may be on your hands. Do not acquire the habit of moistening your fingers with your tongue or lips to erase something from the black-board or your slate. Never borrow from a comrade a piece of chewing gum he has in his mouth to chew it yourself. Never count bank bills by moistening your fingers in your mouth. Never drink from the common cups in railways or in fountains on public squares, as you do not know if a tuberculous person has not used it before you and left germs which you will absorb. Kill all the flies because they carry with their feet germs taken from tuberculous expectorations and lay them on the food or in milk. Never use dry sweeping because you move up clouds of dust which may be laden with germs, but instead always use for sweeping those oily powders sold in stores for that purpose or use moistened saw dust. Dusting should also be done with a moist cloth.

Always remember that the tuberculous germ has two ennemies to which it cannot resist long : sunlight and pure air. In the rays of the sun, the germs will live only a few hours, but they will live for weeks and months in a dark and damp room.

You can see how important it is to let the sun shine in every room of the house and for this reason thick curtains and especially the green paper put on windows to prevent sunlight from discoloring carpets should be discarded.

War should be waged against dark rooms, that is rooms without windows, which should be used only as trunk or store rooms. The air of the room and especially of the bedrooms, must be renewed. This requires an opening through which pure air may come in and vitiated air may go out. This is what is called ventilation. Take the habit of sleeping in a room with half opened windows if possible, and never forget that if the size of a room is just sufficient for one person to sleep in with a sufficient supply of pure air, it should not be made a sleeping room for two or three persons.

Dont abuse your health, avoid excesses, otherwise your defence against disease will be weakened and if the tuberculous germ penetrates in your lungs, it will find a prepared ground where it will try and do serious ravages.

Dr. Jos. de VARENNES, D. P. H.

TUBERCULOSIS.

It is universally recognized by medical authorities that notwithstanding the contagiosity of tuberculosis, the causes of contagion may be easily avoided by the practice of the necessary means of protection. The propagation of tuberculosis is due, for the greater part, to the ignorance of these measures of protection; by making them widely known and also by showing how easily they may be put in practice, two generations at most would probably suffice to eradicate this disease from our province.

Frequency of tuberculosis.—Human tuberculosis is the disease that causes the greatest number of deaths in the whole world. During 21 years, 65,350 deaths on a total of 684,953 in the province of Quebec, were due to tuberculosis.

Causes of tuberculosis.—Tuberculosis is due to a microbe more often found in the sputum or expectoration of consumptives and this microbe may transit itself in various ways:—

1. **Family predisposition.**—Tuberculous parents do not transmit the germ of tuberculosis to this children with this blood, but merely a weakened constitution, a lesser resistance to the invasion of the germ. As the sick parents disseminate germs around them, such children are placed in the most favorable conditions to receive them.

2. **Inhaling dusts laden with germs.**—The breath of a consumptive does not contain germs, but it goes otherwise with his expectoration or with the spray of saliva from his mouth or nose when he speaks, coughs or sneezes and which he may throw to a distance of sometimes three feet. These particles of saliva and the expectoration leave, once dried, a considerable number of germs. It has been calculated that a consumptive may scatter by spitting more than twenty millions of germs daily. These microbes spread in the atmosphere, contaminate it and transform it into a medium of transmission in which predisposed persons will unknowingly absorb the germs of tuberculosis.

3. **Eating contaminated foods**: milk, butter, cream from a tuberculous cow may transmit the germ of tuberculosis; and also the meat from tuberculous animals.

There is real danger in this when it is known at least 10% of cattle are tuberculous.

Predisposing causes of tuberculosis.—1. Heredity: As said above, parents transmit a prepared ground for tuberculosis to their children who usually become an easy prey to the germ.

2. Certain diseases: diabetes, measles, whooping-cough, typhoid fever, bronchitis and broncho-pneumonia.

3. Living in unhealthy, badly lighted, badly ventilated and damp houses.

4. Frequenting unhealthy schools.

5. Working in unhealthy shops.

6. Any cause of malnutrition: insufficient or unwholesome food, excesses, overwork. Alcoholism in the parents prepares "candidates to tuberculosis" not only with themselves but also with their children.

Are we deprived of means whereby to decrease the scourge of tuberculosis and prevent contagion? By all means, no.

1. Preventive treatment of children born from tuberculous parents:—

A child born from a tuberculous mother must be given to the care of another person and his mother must not feed him as otherwise she may contaminate him. As much as possible, such a child should be brought up in the country. All signs of anaemia should be detected and attended to; and this is also necessary for all troubles of the respiratory tract. Later on, he will be avised to take up a means of earning his living in the open air and as far as possible out of workshops.

2. Avoid all risks of contagion of well individuals by sick ones:—

The tuberculous patient transmitting his disease through his expectorations, it stands that he ceases to be a danger for others if his sputum or the various things he may have infected are destroyed or disinfected before getting dry.

At home, the consumptive must spit in cardbord cuspidors or rags which will be burned before they get dry.

When out of his house, he must not spit in the street, on sidewalks, but in a handkerchief or a pocket cuspidor.

When the consumptive coughs or sneezes, he must hold his handkerchief before his mouth. His room must be large and well exposed to sunlight.

Dry sweeping or dusting should be absolutely avoided, such work being done with moist powders or cloths, the former being destroyed and the latter either destroyed or disinfected.

The patient must have his own table utensils and his own toilet articles, which will be cleaned separately with boiling water. The food left by him must be destroyed. The floor of his room must be scrubbed with Javel water in 9 parts of water.

The ventilation of his room must be continually done.

If he should die or move away to another house, his room and its contents must be disinfected.

3. **Avoid the consumption of foods likely to spread the disease:—**

The municipal authorities should control the sale of meat by by-law and organize the inspection of meat and cattle by a veterinary. The inspection of cattle should be made through the whole province. The tuberculin test should be applied and all tuberculous cattle should be slaughtered.

4. **Alcoholism should be destroyed by every means:—**

Alcoholism is the best purveyor to tuberculosis.

5. **Anti-tuberculosis organizations :—**

1. The anti-tuberculosis dispensary of which the purpose is to help the patient by teaching and preventing him from spreading the contagion in his family by sending to his home a visiting nurse who will show what measures of protection must be taken.

2. Sanatoria for the care of consumptives.

3. Hospitals where consumptives are hospitalized, when for a reason or another they cannot remain at home without the risk of contaminating the family.

To conclude:—Tuberculosis is curable, it is the most curable of chronic diseases. What is essentially necessary to cure tuberculosis is an early treatment. Whenever the presence of tuberculosis is probable, a doctor should be consulted at once. Suspicious colds, especially in summer, thinning, weakness are indications that a doctor should be consulted without delay.

Dr A. LAPIERRE, D.P.H.

TUBERCULOSIS

It is always more or less entertaining to speak about disease or death, to recall that, at each moment of life, mankind is threatened by disease or death.

The subject of which I am about to talk may seem uninteresting, but it is exceedingly useful to consider especially for you who will go out in many parts of the country and who, by the share you will take in the education of children, may efficiently cooperate in spreading this useful science of hygiene, so interesting but so little understood.

Tuberculosis or consumption unfortunately works too much havoc in our country and especially in our province. Statistics show that from 3000 to 3500 persons die every year from this disease. This may seem exaggerated, but it is not when it is considered that it is established by the reports of diseases.

It is even believed that these statistics only go this side of truth, because all cases are not reported and a great number remain unknown: for instance, cases of tuberculosis of the kidneys, etc., which are not diagnosed or not reported.

It has been ascertained that victims of tuberculosis generally die between 20 to 35 years of age.

What is the nature of this disease? Tuberculosis is an infectious and contagious disease; it is infectious because it requires an infection by the microbe or bacillus of tuberculosis. This microbe exists almost exclusively in the expectoration or sputum of the patients. It may be, however, transmitted in other ways, through the organs of digestion : for instance, by milk from a tuberculous cow, by the meat from cattle killed by tuberculosis.

The contagion is nearly always transmitted through the organs of respiration. The germ or microbe of tuberculosis exists in the sputum of patients and is carried away when the sputum dries and becomes dust. It then spreads in the air and is inhaled, going into the lungs where it develops itself. This is the most frequent way of tuberculous infection. It is thus easily seen how important it is to always be on the lookout for this transmission of the microbe.

As said above, the sputum dries, thus freeing the bacillus of tuberculosis. Precautions therefore should be taken to prevent it from drying and for this reason, patients should always expectorate in receptacles containing water. It would be well to add to that water some antiseptic such as carbolic acid or some other disinfectant; if not, water in a metal receptacle is sufficient.

Such receptacles may be either a temporary card-board cuspidor which is destroyed by burning, or a pocket cuspidor which the patient carries with him and which may be a bottle with a wide neck. The necessary thing is that the sputum be prevented from dessicating.

Treatment of tuberculosis : — The general treatment, is very simple in theory, but very difficult in practice. It consists in :—

1. absolute rest,
2. pure air,
3. a good alimentation.

This seems simple enough and anybody can treat oneself, but in practice, it requires energy and time. The treatment is quite long and is constituted by absolute rest, a dwelling well lighted by the sun and well ventilated, good, wholesome and fortifying food. The patient will accustom himself to sleeping in a room with the air openings opened day and night, so as to always get pure air. The windows of the room must have no curtains, no draperies or paper coverings to prevent sunshine from coming in. The sun is nature's greatest benefactor, the best physician who ever has existed. The sun may kill the microbe in a few days.

With this general treatment and, if needed, the care and experience of a physician, the patient may be cured in the majority of cases. Tuberculosis is an eminently curable disease, but the treatment is long and difficult, lasting from 18 months to 3 years.

Two things may happen : the patient may be poor and unable to follow the treatment or he may be rich but will not follow it. If he is too poor, he cannot take the necessary rest; ceasing work means for him loss of livehood and poverty for his family. Following the treatment becomes for him an impossibility. In such circumstances, it belongs to the public authorities to help him.

In various parts of the country, efforts are made to procure to the poor patient the benefit of this treatment by the foundation of hospitals where the tuberculous sick are received when they lack the means of following the cure at home. There is already a hospital in Quebec. Let us hope that it will be possible, before long, to establish in many places such institutions where the tuberculous poor may be taken in and isolated to help him in curing himself and ceasing to be a menace for his family. This is indeed a serious problem.

The mortality due to tuberculosis is too great in our Canadian population and this has become a national issue.

To sum up :—I beg that you always remember this : Tuberculosis is an infectious and contagious disease. There is

a prejudice that it is an hereditary and family disease and many people think that if one in a family is attacked by the disease, all the others must fall a prey to it. This widely spread false notion should disappear. Tuberculosis is not hereditary. In order that it were so, it would be necessary that parents should transmit to their children the germ of the disease and this is not so. Some authors claim indeed that the child may be infected directly before birth by his mother's blood, but if this were so, it would be a very rare exception. A child born from tuberculous parents is not necessarily a consumptive, but in his case, there is a more favorable ground for the transmission of the disease and development of the bacillus; being predisposed to take the disease, he will require more care than others. Some say that predisposition and heredity are one and the same thing, but this is not so. But a child born from tuberculous parents will require greater care, a greater resistance than the child whose parents are free from the disease.

Sometime during our life, we have inhaled the bacillus of tuberculosis, but where it has not found a favorable ground for developing itself, no harm has been done. He whose parents were tuberculous and who has a lesser resistance, must do all in his power to increase his strength by living without excesses of any kind, by eating proper and abundant food, living in pure air and observing all the laws of hygiene.

Once more, do I say it : our people should be made to understand that tuberculosis is not hereditary. What is transmitted by the parents is a favorable predisposition, but not the disease itself. They should also be made to firmly believe that tuberculosis is eminently contagious but also as much curable.

Dr. E. M. A. SAVARD, D. P. H.

FIFTH DAY

INFANTILE HYGIENE

FOOD HYGIENE

INFANTILE MORTALITY

Infantile mortality is a subject to which your attention must be called.

Babies die in much too high numbers in the Province of Quebec. Infantile mortality reaches with us unheard of figures. This may be seen by these interminable processions of small white hearses during the summer months and especially in cities.

The cause of such a mortality is infantile diarrhoea during the summer months and most often for the rest of the year the ignorance of the care required by babies, while, from year to year, contagious diseases make a considerable harvest of infant lives.

1. **Infantile diarrhoea.** — A baby is fed by its mother or with a bottle. In the first case, it does not generally die, but it is not our intention to speak of this mode of feeding.

On the other hand, babies fed on the bottle give a very high death rate. Why is this so ?

There are several causes to this state of things : the baby is fed an impure milk, or it is given too much milk or this is done without reasonableness.

Milk is impure when coming from tuberculous cows or when the milking and handling are done in an unclean manner or when milk is contaminated or merely left to warm up at home. Even supposing milk to be delivered in first class condition, it too often happens that no care is taken to preserve it : it is left exposed to dusts and flies, or in warm places, all of which bring about a multiplication of the bacteria. The baby of which it is the exclusive food is exposed to all kinds of diseases that may be conveyed by milk or to drink milk that is in such a state that it may cause disease.

Milk is fed the baby in too great a quantity or in a manner devoid of all reason when the infant is left to take too much of it at one meal or when the time between meals is too short to allow it to digest the previous feeding. Every time baby cries, it is sought to calm it by giving it milk. Its stomach is unable to digest such a quantity of milk and therefore developes indigestion and diarrhoea; then it cries again and is fed some more milk.

Why not observe what is done with grown-up people who, when they have indigestion and colic, cease at once taking any food because indigestion comes from their having eaten too much or from the food not having agreed with their stomach for a reason or another. Why not do the same thing with infants ? The first thing to be done is to stop all feeding and to give them only a little sweetened boiled water for 12

to 24 hours, after which feeding may be resumed with pasteurized milk mixed with boiled water.

If this is carefully done, the infant immediately improves most of the time. Should, however, this complaint persist, then a doctor should be called without too much delay. Fifty per cent of the children who die prematurely often do so on account of complaints which might have been easily conjured by mothers with a little prudence and care.

2. **Ignorance of the care required by babies** : — Too many mothers are ignorant of the care required by their babies. A frequent cause of mortality is the diseases of the respiratory organs. Babies need more warmth than adults, they must be kept away from air-currents, from dampness ; they must always be warmly clothed, especially in spring and fall; they must be protected from flies, from a direct and too strong a light; they must not be rocked, marched about or shaken; they must be kept comfortable by changing wet diapers or clothing, etc. Teats and especially those which are made at home with a piece of linen dipped in water, sugar, or milk are to be absolutely prohibited, because they gather all the germs and may be the cause of mortal diseases to children.

Another cause of frequent death is the use of soothing syrups in which there is opium, which is a poison for children. Too many mothers are in the habit of using such syrups to put their babies to sleep, when it would be sufficient to search for the cause of their crying and to remove it. This is especially true when children are left in the care of servants. Many children die because of the ignorance of mothers of the nefarious effects of the so-called soothing syrups.

3. **Contagious diseases.** — Contagious diseases kill a very great number of children yearly and often through the fault of the parents who do not carefully enough see that no contagious disease has a chance to reach them. Persons coming from houses where there is a contagious disease should never be allowed to touch babies. If there is such a disease at home, all contact, even indirect, must be prevented between the baby and the sick person. The municipal sanitary authority must be notified at once to permit it to take the necessary steps. And as children in other families ought also to have some consideration, parents should not allow their children to go to school when there is a contagious disease in their home.

A mother suffering from a cold should avoid kissing her baby to prevent it from catching it. Why should, for this matter, a mother kiss her baby and especially allow others to kiss it. A baby does not like being kissed, or at least it is very indifferent to such fondling. It follows that one should avoid risking to communicate a disease or even a mere sore to baby, for one's or for other people's enjoyment.

In summing up, I shall call your attention upon the care to be given to children. For newly born children, maternal feeding is advised. A mother's paramount duty is to feed herself her baby, and this is the safest guarantee of life for the latter.

When the baby is fed on the bottle, always use a pure milk and carefully attend to the preservation of such a milk; carefully cleanse the bottle, teats and other utensils used in preparing the milk, each of which must always be cleansed in boiling water each time it has been used; carefully measure each meal and never give too much at a time or at too frequent intervals; cease giving food to a child as soon as there is evidence of a complaint or of a symptom of disease; only feed it, during 12 to 24 hours, with boiled water, after which time you may gradually feed it pasteurized milk; carefully supervise the baby's health during summer time. In the other seasons, the child should always be warmly dressed; cold should be avoided to prevent croup and pneumonia.

Infantile mortality is a national problem and it is most important that we preserve our population in this Dominion. Let us strive to save the lives of our babies to fully answer the designs of Divine Providence who has given us such numerous families. Let us try and decrease as much as possible the infantile mortality which has become such a menace.

Dr. E. M. A. SAVARD, D. P. H.

INFANTILE HYGIENE

Infantile mortality has been responsible for the loss of more than 14,000 children in the province of Quebec in 1921. Sixteen per cent of the children have died before attaining the age of 12 months.

Statistics show that intestinal diseases are the cause of half the total deaths in children up to 2 years old. Moreover, when these diseases do not kill children, they leave them in a state of physical inferiority which makes them an easy prey to other kinds of diseases.

Intestinal diseases are due to the fact that a child is often deprived without any necessity of the food naturally prepared for him :— i. e., his mother's milk, and also to the fact that many children sick from an irrational feeding do not receive the required medical care.

The mother owes her milk to her child : cow's milk which is substituted to it was not destined for the tender stomach of the young child. Nature has willed that cow's milk be

secreted for the calf the digestive organs of which are very different from the child's.

A mother who can feed her child and who does not do so, gravely fails in her duty because after having given life to a child, she has the obligation to preserve it by every means, and because the best way of doing so is to feed it herself.

It is proven that of 100 children fed on the bottle, 90 die before 12 months, whereas out of 100 children fed on their mother's milk, 9 only die.

It is an unexceptional thing for mothers to be unable to feed their babies and before deciding on this point, they should consult a physician who is the sole possessor of the necessary knowledge to advise them .

The death of a baby is too easily accepted.

Here is an extract from a letter from a priest of the district of Quebec to the Provincial Bureau of Health :—

"When a nursling dies, why sillely solace one-self by saying or listening to other people who say :—"Poor baby, he is happy indeed, he is one angel more in Heaven" ! Would it not be better to preserve him to work for the glory of religion and of his country and to become a saint only later on !"

Another fault to be met with, is that a physician is not consulted early enough when a child takes sick. Why not do unto children as unto men ? Children have not been put on earth to live one month, six months, one year, but their ordinary span of life, and solace is permitted on the death of a child only when all has been done to prevent it.

Dr. A. LAPIERRE, D. P. H.

FOOD

My dear Children,

To live, two things are essential : — breathing and feeding. To keep in good health, one must breathe pure air and eat wholesome food.

I will now speak of food.

This short talk will be divided in two parts. In the first, I will say what conditions are required for the food to be profitable to one's nutrition. In the second, I will say how food should be partaken of in order that digestion be well made. But to begin with, it is important to give you some preliminary notions on feeding in general.

What is feeding ? It is eating certain substances solid or liquid, known under the name of food or alimentary substances. This food of different kinds once introduced in the stomach

undergoes certain changes and ends in becoming part of our own substance. What we have eaten has become our blood, our bones, our flesh. How comes it then that, when we eat several times a day and when we add to our body more and more substances, we do not become enormous ? It is because, at the same time, our body wears away, burns up, continually looses part of its own substance and what we eat serves to replace what was thus destroyed.

During youth the substances transformed into our own flesh are more considerable than what is destroyed : this is why we grow up.

When this period of growing is finished, the substances transformed into our flesh and those which wear away are abaut the same.

We remain in a stationary state.

Food is thus one of the things essential to life. If we should not eat nor drink, the waste in our tissues would not be replaced and we could not live, death soon being the outcome.

When we eat and drink, but when the food is not wholesome or is ingested without observing certain rules, there is still some nutrition, but it is deficient. Consequently, our body becomes weak, the wasted tissues are incompletely replaced and we live miserably in a bad state of health.

It is therefore important that we should know what food we can take, what qualities it should possess, and also how we should take it in order that it be easily digested.

Let us first examine the qualities food should possess.

Food must be wholesome, clean and inviting.

To this end, it is required :—

That dealers of foodstuffs have clean stores and that they themselves as well as their employees be clean.

They must also be in good health.

The butcher, the grocer, the milkman, all dealers in foodstuffs, must not suffer from any contagious disease; their establishments must be clean and the foodstuffs protected against contamination. Be sure that bread and vegetables are under cover, that milk has been produced in clean conditions, from healthy cows, that meats are fresh and from healthy animals.

All foodstuffs are perishable and promptly decay when not protected against dusts, dirt, heat, flies, or when handled by persons with dirty hands.

Besides, foodstuffs covered with dirt, dusts, fly excrements, or which have been much handled, may spread tuberculosis, typhoid fever or diarrhoea germs.

By all means be suspicious of uncooked foodstuffs, such as fruits, vegetables, sweets, etc. Flies coming from some nearby manure heap with their feet laden with germs, may have contaminated these things; the dealer's hands are often dirty, and the heat of cooking not having destroyed the germs deposited on such foodstuffs, they must always be held as suspicious.

Milk must especially be looked after and all the more so, if destined to young children. These should be fed only fresh, pure milk. Pasteurized milk, that is milk which has been sufficiently heated to kill germs, must always be used, when one is not sure of its production and qualities.

Do not forget either that food should be kept clean not only in stores, but in your homes.

Cover and protect your food against dusts and flies.

Preserve milk **cool** and covered.

What kind of food should be eaten ? In a general way, it should be varied. Let us remark however that one should not eat too much meat or fish. Let us instead eat more fruits, vegetables, milk, bread, cereals.

While it is important to eat only wholesome foods, it is equally important to know how they should be eaten.

A meal is an important act of the day.

Before sitting down to meals, one must see that the food is sufficiently cooked and well prepared. Many foods are well digested only when well cooked.

Food must never be prepared nor touched by a sick person.

Never forget to wash your hands before sitting down to a meal; this is of the utmost importance. Your hands may look clean, but still be covered with disease germs or microbes. When touching bread or other foods which you carry to your mouth, these germs will get into it and may transmit diseases to you.

How should one eat ? One must eat slowly and grind well one's food. As you already know, food after having been well ground in the mouth and soaked with saliva immediately goes down into the stomach where it remains quite a time. While there, it undergoes all the work of digestion.

What happens when you eat too quickly ? First, the food is not sufficiently ground in the mouth. God has given you teeth that you may cut, divise and grind your food. In order that the food introduced in the stomach be well digested, it must first be divided and reduced to a state of pulp.

If you eat too quickly, that is if you swallow everything as it is, the food when once in your stomach is not prepared to be digested; the stomash has no teeth. The food has not been soaked with saliva which plays a very important part in digestion.

What happens then ? The stomach being called upon to do the work which should have been done by the teeth and saliva overworks itself and ends in fatiguing itself. It cannot anymore fulfill its task, or can only fulfill it in an imperfect manner. Digestion is badly done and the result is a weakening or a loss of health.

Always give your attention to grinding well what you eat; always eat slowly enough to permit your food even when liquid to well be soaked with saliva. The stomach will then have only its own work to attend to and will maintain itself in the best of conditions ; digestion will be easily made and your health will always be good.

Dr. Jules CONSTANTIN, D. P. H.

WATER SUPPLY

Water is an indispensable food; we need it every day and we use it raw or in foods of which it is part, such as milk, vegetables and fruits.

I shall speak about the water we drink : it may be a cause of health or of disease. It is healthful when pure and containing no noxious germs or chemical substances injurious to health ; it may communicate grave and even fatal diseases when it contains the germs of typhoid, dysentery, etc.

How can we find whether water is pure or not ? By our physical senses : taste and sight, we cannot solve this question, because our senses give only probabilities which too often deceive us. Water that tastes good, and fresh, "rock water", may contain very dangerous germs and clear water may not always be pure. The quality of water can be proven only by a special process called **analysis,** which is done free upon request at the laboratories of the Provincial Bureau of Health.

By what means do we get a water supply ? By boring wells, finding springs, taking water in rivers, or lakes or preserving rain water in tanks or cisterns.

Wells. — Wells are divided in ordinary or stone-built wells and tubular or artesian wells. Ordinary wells are not to be recommended because they receive water which has washed the surface of the ground, manure, etc, without being purified. They may however, be improved by protecting them by means of a concrete tube going down at least to 6 feet in the ground and raised to about 2 feet above the ground.

In this manner, surface water must filter through about 6 feet of earth, which in our country is sufficient to absorb all impurities.

Tubular or artesian wells are generally good. I have, however, seen some, 50 to 60 deep and situated at about 200 feet from a river, which supplied water injurious to health.

Springs. — Spring water is palatable but not always safe. Springs must, like wells, be protected and isolated by an earth or concrete bank of a radius of at least ten feet. It is always well to get the opinion of an hygienist when deciding to get a water supply from a spring.

River water. — Water courses such as rivers, lakes, ponds, supply a water which cannot be recommended because they always receive surface water charged with all the impurities found in its way. River water ought always to be purified by a filter, at least a house filter.

Rain water. — It must be aired to be good, otherwise it has an insipid taste.

In a general way, water should never be drawn from a place situated below the level of a manure heap or a cesspool. In the last place, the advice of an hygienist should always be asked before choosing a water supply.

Dr. H. SANSON, D. P. H.

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